

US EPA RECORDS CENTER REGION 5



488430

REFERENCE 9

SITE NAME J-P. Refuse Disposal

SITE ID ILD 980606 339

Dangerous Properties of Industrial Materials

Sixth Edition

N. IRVING SAX

Assisted by:

Benjamin Feiner/Joseph J. Fitzgerald/Thomas J. Haley/Elizabeth K. Weisburger



VAN NOSTRAND REINHOLD COMPANY
NEW YORK CINCINNATI TORONTO LONDON MELBOURNE

360 BENZEDRINE SULFATE

BENZEDRINE SULFATE

CAS RN: 156310

mf: $C_{18}H_{26}N_2 \cdot H_2O_4S$; mw: 368.54

NIOSH #: SI 1225000

SYNS:

PHENETHYLAMINE, ALPHA-METHYL-, SULFATE (2:1)
DIAMPHETAMINE SULFATE

DL-ALPHA-METHYLPHENETHYLAMINE SULFATE
1-PHENYL-2-AMINOPROPANE SULFATE

TOXICITY DATA:

ipr-rat LD₅₀: 25 mg/kg
scu-rat LD₅₀: 10 mg/kg
scu-mus LD₅₀: 14 mg/kg
ipr-gpg LD₅₀: 50 mg/kg

3

CODEN:

JPETAB 100,267,50
JPETAB 71,62,41
JPETAB 87,214,46
JPETAB 100,267,50

THR: HIGH ipr, scu. See also sulfates.

Disaster Hazard: When heated to decompose it emits very toxic fumes of SO_x and NO_x.

D-BENZEDRINE SULFATE

CAS RN: 51638

mf: $C_{18}H_{26}N_2 \cdot H_2O_4S$; mw: 368.54

NIOSH #: SI 1400000

SYNS:

AMPHEDRINE
AMPHEREX
(+)-AMPHETAMINE SULFATE
D-AMPHETAMINE SULFATE
DEXAMPHETAMINE SULFATE
DEXAMYL
DEXEDRINA
DEXEDRINE SULFATE
DEXIES
D-ALPHA-METHYLPHENETHYL-AMINE SULFATE
OBESDRIN
FASTBALLS
HEARTS

DEXTROAMPHETAMINE SULFATE
DEXTRO-ALPHA-METHYLPHENETHYLAMINE SULFATE
ORANGES
PHENEDRINE
PHENOPROMIN
D-1-PHENYL-2-AMINOPROPANE SULFATE
DEXTRO-1-PHENYL-2-AMINO-PROPANE SULFATE
D-BETA-PHENYLISOPROPYL-AMINE SULFATE
DEXTRO-BETA-PHENYLISOPROPYLAMINE SULFATE

TOXICITY DATA:

ipr-mus TD₅₀: 50 mg/kg/(8D preg): TER
unk-mus TD₅₀: 50 mg/kg/(8D preg): TER
orl-rat LD₅₀: 38 mg/kg
ipr-rat LD₅₀: 70 mg/kg
scu-rat LD₅₀: 200 mg/kg
ivn-rat LD₅₀: 30 mg/kg
orl-mus LD₅₀: 33 mg/kg
ipr-mus LD₅₀: 72 mg/kg
scu-mus LD₅₀: 16 mg/kg
ivn-mus LD₅₀: 30 mg/kg
orl-dog LD₅₀: 10 mg/kg
ivn-dog LD₅₀: 3 mg/kg
ivn-rbt LD₅₀: 10 mg/kg

CODEN:

TJADAB 1,413,68
TJADAB 1,413,68
JOPDAB 69,663,66
TXAPAP 45(1),49,78
12VXA5 8,335,68
JPETAB 110,180,54
TXAPAP 21,302,72
JPETAB 128,176,60
AIPTAK 184,34,70
JPETAB 137,365,62
PSEBAA 118,557,65
PSEBAA 118,557,65
JPETAB 110,180,54

Toxicology Review: ISYAM* -343,70; 27ZTAP 3,46,69.

THR: An exper TER. HIGH orl, ipr, scu, ivn. A habit-forming stimulant. See also sulfates.

Disaster Hazard: When heated to decompose it emits very toxic fumes of SO_x and NO_x.

L-BENZEDRINE SULFATE

CAS RN: 51627

mf: $C_{18}H_{26}N_2 \cdot H_2O_4S$; mw: 368.54

NIOSH #: SI 1575000

SYNS:

(-)-AMPHETAMINE SULFATE
L-AMPHETAMINE SULFATE
LEVEDRINE

L-1-PHENYL-2-AMINOPROPANE SULFATE

TOXICITY DATA:

scu-rat LD₅₀: 160 mg/kg
ipr-mus LD₅₀: 232 mg/kg

3

CODEN:

JPETAB 71,62,41
JPETAB 158,135,67

THR: HIGH scu, ipr. See also sulfates.

Disaster Hazard: When heated to decompose it emits very toxic fumes of SO_x and NO_x.

BENZENAMINE HYDROCHLORIDE

CAS RN: 142041

mf: $C_6H_7N \cdot ClH$; mw: 129.60

NIOSH #: CY 0875000

Crystals. vap. d: 4.46, d: 1.22, mp: 198°, bp: 245°, flash p: 380°F (OC).

SYNS:

ANILINE HYDROCHLORIDE
"ANILINE SALT"
CHLORHYDRATE D'ANILINE (FRENCH)

CHLORID ANILINU (CZECH)
NCI-CO3736
USAF EK-442

TOXICITY DATA:

skin-rbt 500 mg/24H MOD
eye-rbt 20 mg/24H SEV
orl-rat TD₅₀: 130 gm/kg/2Y-C:CARC

3

CODEN:

28ZPAK -65,72
28ZPAK -65,72
NCITR* NCI-CG-TR-130,78
NTIS** PB214-270
NTIS** PB214-270
NTIS** AD277-689
IARC** 27,39,82
IARC** 27,39,82
IARC** 27,39,82

Aquatic Toxicity Rating: TLm96: 100-10 ppm WQCHM* 2,-74. NCI Carcinogenesis Bioassay Completed; Results Positive: Rat (NCITR* NCI-CG-TR-130,78). NCI Carcinogenesis Bioassay Completed; Results Negative: Mouse (NCITR* NCI-CG-TR-130,78). Reported in EPA TSCA Inventory, 1980. EPA TSCA 8(a) Preliminary Assessment Information Proposed Rule FERREAC 45,13646,80.

THR: An exper CARC. HIGH ipr; MOD orl, ipr. MOD skin irr, SEV eye irr in rbt. See also aniline.

Fire Hazard: Slight, when exposed to heat or flame.

Spontaneous Heating: No.

Disaster Hazard: Dangerous; when heated to decompose or on contact with acid or acid fumes, emits highly toxic fumes of aniline and chlorine compounds; can react vigorously with oxidizing materials.

To Fight Fire: Water, CO₂, water mist or spray, dry chemical.

BENZENE

CAS RN: 71432

mf: C_6H_6 ; mw: 78.12

NIOSH #: CY 1400000

Clear colorless liquid. mp: 5.51°, bp: 80.093°-80.094°, flash p: 12°F (CC), d: 0.8794 @ 20°, autoign. temp.: 1044°F, lel: 1.4%, uel: 8.0%, vap: press: 100 mm @ 26.1°, vap. d: 2.77, ucl: 95-100.

SYNS:

(6)ANNULENE
BENZEEN (DUTCH)
BENZEN (POLISH)
BENZOL
BENZOLENE
BENZOLO (ITALIAN)
BICARBURET OF HYDROGEN
CARBON OIL

COAL NAPHTHA
CYCLOHEXATRIENE
FENZEN (CZECH)
MINERAL NAPHTHA
MOTOR BENZOL
NCI-C55276
PHENYL HYDRIDE
PYROBENZOLE

TOXICITY DATA: 3

skin-rbt 15 mg/24H open MLD
eye-rbt 88 mg MOD
eye-rbt 2 mg/24H SEV
cyt-rat-scu 12 gm/kg/12D-I
mnt-mus-ipr 500 uL/kg
cyt-mus-orl 100 uL/kg
cyt-mus-ipr 100 uL/kg
dlt-mus-ipr 5 mg/kg
cyt-rbt-scu 8400 mg/kg
scu-mus TDLo: 2700 mg/kg/(13D preg): TER
ihl-hmn TCLo: 100 ppm/10Y-I: CAR
orl-rat TDLo: 52 gm/kg/52W-I: CAR
skin-mus TDLo: 1200 gm/kg/49W-I: NEO
scu-mus TDLo: 600 mg/kg/17W-I: ETA
par-mus TDLo: 670 mg/kg/19W-I: ETA
ihl-hmn TC: 400 ppm/8Y-I: ETA
ihl-man TC: 2100 mg/m3/4Y-I: CAR
orl-rat TD: 10 gm/kg/52W-I: CAR
ihl-hmn TDLo: 130 mg/kg: CNS
ihl-hmn LCLo: 20000 ppm/5M
ihl-hmn TCLo: 210 ppm: BLD
ihl-rat TCLo: 670 mg/m3/24H (15D pre/1-22D preg)
ihl-rat TCLo: 56600 ug/m3/24H (1-22D preg)
ihl-rat TCLo: 50 ppm/24H (7-14D preg)
ihl-rat TCLo: 150 ppm/24H (7-14D preg)
scu-mus TDLo: 1100 mg/kg (12D preg)
scu-mus TDLo: 2700 mg/kg/(13D preg) TFX: TER
orl-mus TDLo: 9 gm/kg (6-15D preg)
orl-mus TDLo: 12 gm/kg (6-15D preg)
orl-rat TD: 10 gm/kg/52W-I TFX: CAR
ihl-hmn TCLo: 100 ppm: CNS
ak-man LDLo: 194 mg/kg
orl-rat LD50: 3800 mg/kg
ihl-rat LC50: 10000 ppm/7H
orl-rat LDLo: 1150 mg/kg
ak-mus LD50: 4700 mg/kg
orl-mus LC50: 9980 ppm
orl-mus LD50: 990 ug/kg
orl-dog LDLo: 2000 mg/kg
orl-dog LCLo: 146000 mg/m3
ak-mus LCLo: 170000 mg/m3
orl-rat LDLo: 88 mg/kg
orl-rat LDLo: 527 mg/kg
ak-mus LCLo: 1400 mg/kg
ak-mus LCLo: 20000 ppm/5M

CODEN:

AIHAAP 23,95,62
AMIAB 14,387,56
28ZPAK ,23,72
GTPZAB 17(3),24,73
ENMUDM 2,43,80
ENMUDM 2,43,80
ENMUDM 2,43,80
TPKVAL 15,30,79
PSDTAP 15,275,74
AMBNAS 17,285,70
TRBMAV 37,153,78
MELAAD 70,352,79
BJCAAI 16,275,62
KRANAW 9,403,32
KLWOAZ 12,109,33
BLOOAW 52,285,78
NEJIMAG 271,872,64
MELAAD 70,352,79
AHYGAJ 31,336,1897
29ZUA8 ,,-,53
27ZXA3 ,,-,341,63
HYSAAV 33,327,68
HYSAAV 33,112,68
JHEMA2 24,363,80
JHEMA2 24,363,80
TOXID9 1,125,81
AMBNAS 17,285,70
TJADAB 19,41A,79
TJADAB 19,41A,79
MELAAD 70,352,79
INMEAF 17,199,48
85DCAI 2,73,70
TXAPAS 19,699,71
28ZRAQ ,,-,113,60
TXAPAS 1,156,59
HYSAAV 32,349,67
JIHTAB 25,366,43
AGGHAR 18,109,60
HBAMAK 4,1313,35
HBTXAC 1,324,56
HBTXAC 1,324,56
JTEHD6 -(Suppl.2),45,77
HBTXAC 1,42,56
HBAMAK 4,1313,35
AEPPAE 138,65,28

Aquatic Toxicity Rating: TLm96: 100-10 ppm WQCHM* 2.,74. Carcinogenic Determination: Human Suspected IARC** 7,203,74.

TLV: Air: 10 ppm DTLVS* 4,37,80. Toxicology Review: ARPAAQ 11,434,31; EVHPAZ 11,163,75; AEHLAU 22,373,71; PAREAQ 4,1,52; FNSCA6 2,67,73; MUREAV 47(2),75,78; AMSVAZ 118,354,44; ZHPMAT 166,113,78; JTEHD6 -(suppl.2),69,77; PHRPA6 41,1357,26; CTOXAO 11,531,77; BNYMAM 54, 413,78; KRANAW 9,403,32; 27ZTAP 3,22,69. OSHA Standard: Air: TWA 10 ppm; CL 25 ppm; Pk 50 ppm/10M/8H (SCP-U) FEREAC 39,23540,74. DOT: Flammable Liquid, Label: Flammable Liquid. FEREAC 41,57018,76. Occupational Exposure to Benzene recm std: Air: CL 10 ppm/60M NTIS**. Currently Tested by NTP for Carcinogenesis by Standard Bioassay Protocol as of December 1980. "NIOSH Manual of Analytical Methods" VOL 1 127, VOL 3 S311. Reported in EPA TSCA Inventory, 1980. EPA TSCA 8E NO:12770027-Followup Sent as of April, 1979.

THR: Poisoning occurs most commonly through inhal of the vapor, though benzene can penetrate the skin, and poison in that way. Locally, benzene has a comparatively strong irr effect, producing erythema and burning, and, in more severe cases, edema and even blistering. Exposure to high conc of the vapor (3000 ppm or higher) may result from failure of equipment or spillage. Such exposure, while rare in industry, may result in acute poisoning, characterized by the narcotic action of benzene on the CNS. The anesthetic action of benzene is similar to that of other anesthetic gases, consisting of a preliminary stage of excitation followed by depression and, if exposure is continued, death through respiratory failure. The chronic, rather than the acute form, of benzene poisoning is important in industry. It is a recog leukemogen. There is no specific blood picture occurring in cases of chronic benzol poisoning. The bone marrow may be hypoplastic, normal, or hyperplastic, the changes reflected in the peripheral blood. Anemia, leucopenia, macrocytosis, reticulocytosis, thromocytopenia, high color index, and prolonged bleeding time may be present. Cases of myeloid leukemia have been reported. For the supervision of the worker, repeated blood examinations are necessary, including hemoglobin determinations, white and red cell counts and differential smears. Where a worker shows a progressive drop in either red or white cells, or where the white count remains below 5,000 per cu mm or the red count below 4.0 million per cu mm, on two successive monthly examinations, he should be immediately removed from exposure. Following absorption of benzene, elimination is chiefly through the lungs, when fresh air is breathed. The portion that is absorbed is oxidized, and the oxidation products are combined with sulfuric and glycuronic acids and eliminated in the urine. This may be used as a diagnostic sign. Benzene has a definite cumulative action, and exposure to relatively high conc is not serious from the point of view of causing damage to the blood-forming system, provided the exposure is not repeated. On the other hand,

scious, and if exposure is not terminated, death can follow from respiratory failure. In cases of narcosis that recover, the after-effects are more serious than those of delayed chloroform poisoning, usually taking the form of damage to the kidneys, liver and lungs. Exposure to lower conc, insufficient to produce unconsciousness, usually results in severe gastro-intestinal upset, and may progress to serious kidney and hepatic damage. The kidney lesion is an acute nephrosis; the liver involvement consists of an acute degeneration of the central portions of the lobules. Where recovery takes place, there may be no permanent disability. Marked variation in individual susceptibility to carbon tetrachloride exists, some persons appear to be unaffected by exposures which seriously poison their fellow-workers. Alcoholism and previous liver and kidney damage seem to render the individual more susceptible. Conc of the order of 1,000 to 1,500 ppm are sufficient to cause symptoms if exposure continues for several hours. Repeated daily exposure to such conc may result in poisoning.

Though the common form of poisoning following industrial exposure is usually one of gastrointestinal upset, which may be followed by renal damage, other cases have been reported in which the CNS has been affected with production of polyneuritis, narrowing of the visual fields, and other neurological changes. Prolonged exposure to small amounts of carbon tetrachloride has also been reported as causing cirrhosis of the liver.

Locally, a dermatitis may be produced following long or repeated contact with the liquid. The skin oils are removed, and the skin becomes red, cracked and dry. The effect of carbon tetrachloride on the eyes either as a vapor or as a liquid, is one of irr with lacrimation and burning.

Industrial poisoning is usually acute, with malaise, headache, nausea, dizziness, and confusion, which may be followed by stupor and sometimes loss of consciousness. Symptoms of liver and kidney damage may follow later, with development of dark urine, sometimes jaundice and liver enlargement, followed by scanty urine, albumenuria and renal casts, uremia may develop and cause death. Where the exposure has been less acute, the picture is usually one of headache, dizziness, nausea, vomiting epigastric distress, loss of appetite, and fatigue. Visual disturbances (blind spots, spots before the eyes, a visual "haze" and restriction of the visual fields), secondary anemia, and occasionally a slight jaundice may occur. Dermatitis may be noticed on the exposed parts. Caution: Severe reaction with allyl alcohol, Al, Al(C₂H₅)₃, Ba, (benzoyl) peroxide + C₂H₄, Be, BrF₃, Ca(OCl)₂, diborane, C₂H₄, dimethyl formamide, disilane, F₂, Li, Mg, liquid O₂, Pu, K, (AgClO₄ + HCl), potassium-*tert*-butoxide, Na, NaK, tetrasilane, trisilane, U, Zr, burning wax. See chlorinated HC. It has been banned from household use by FDA.

Disaster Hazard: Dangerous; when heated to decomp, emits highly tox fumes of phosgene.

Incomp: Aluminium trichloride; calcium disilicide; chlorine trifluoride; decarborene (14); dibenzoyl peroxide;

N-N-dimethylformamide; 1,2,3,4,5,6-hexachlorocyclohexane; dinitrogen tetraoxide; fluorine; metals; potassium-*tert*-butoxide.

For further information see Vol. 1, No. 2 and Vol. 3, No. 5 of *DPIM Report*.

CARBON TETRAFLUORIDE

CAS RN: 75730 NIOSH #: FG 4920000
mf: CF₄; mw: 88.01

Colorless gas. mp: -184°, bp: -127.7°, d: 1.96 @ -184°.

SYNS:

FREON 14

TETRAFLUOROMETHANE

HALON 14

TOXICITY DATA: 1
ihl-rat LC₅₀: 895000 ppm/15M

CODEN:

MRLR** No.23,50

Reported in EPA TSCA Inventory, 1980.

THR: LOW via inhal route. Less chronically toxic than carbon tetrachloride. See halogenated HC. Violent reaction with Al.

Disaster Hazard: See halogenated HC, aliphatic. When heated to decomp it emits tox fumes of F⁻.

Incomp: Aluminium.

CARBON TETRAIODIDE

CAS RN: 507255 NIOSH #: FG 4960000
mf: CI₄; mw: 519.61

Octahedral, red crystals. mp: 171° decomp, d: 4.32.

SYNS:

CARBON IODIDE

TETRAIODOMETHANE

TOXICITY DATA:
ivn-mus LD₅₀: 178 mg/kg

CODEN:

CSLNX* NX#02298

Reported in EPA TSCA Inventory, 1980.

THR: HIGH ivn. See also iodoform. Vigorous reaction with BrF₃.

Disaster Hazard: When heated to decomp it emits tox fumes of I⁻.

Incomp: Bromine trifluoride; lithium.

CARBON TRIFLUORIDE

CAS RN: 75467 NIOSH #: PB 6900000
mf: CHF₃; mw: 70.02

Colorless, odorless gas. mp: -163°, bp: -82.2°, d: 1.52 (liq) @ -100°.

SYNS:

FLUOROFORM

METHYL TRIFLUORIDE

FREON F-23

TRIFLUOROMETHANE

TOXICITY DATA:
sln-dmg-ihl 98 ppm/10M

CODEN:

ENVRAL 7,275,74

THR: MUT data. A MLD resp irr. Narcotic in HIGH conc. See also fluorides.

Disaster Hazard: When heated to decomp it emits tox fumes of F⁻.

ivn-mus LD₅₀: 90 mg/kg
 orl-dog LD₅₀: 100 mg/kg
 ivn-dog LD₅₀: 23 mg/kg
 orl-cat LD₅₀: 60 mg/kg
 orl-rbt LD₅₀: 50 mg/kg
 ipr-gpg LD₅₀: 100 mg/kg
 orl-hmn TD_{Lo}: 7 mg/kg: CNS
 orl-mus LD₅₀: 170 mg/kg

TXAPA9 19,705,71
 TXAPA9 19,705,71
 TXAPA9 14,182,69
 TXAPA9 19,705,71
 TXAPA9 19,705,71
 BMJOAE 1,740,67
 THERAP 20,297,65

THR: A hmn CNS. HIGH orl.

Disaster Hazard: When heated to decomp it emits very tox fumes of F⁻, NO_x and HCl.

PHENIDONE

CAS RN: 92433 NIOSH #: UQ 8750000
 mf: C₉H₁₀N₂O; mw: 162.21 mp: 121°.

SYNS:

1-PHENYL-3-OXOPYRAZOLIDINE 1-PHENYL-3-PYRAZOLIDONE
 1-PHENYL-3-PYRAZOLIDINONE

TOXICITY DATA: 3 **CODEN:**
 orl-rat LD₅₀: 200 mg/kg KODAK* ,.,71
 ipr-rat LD₅₀: 200 mg/kg KODAK* ,.,71

Reported in EPA TSCA Inventory, 1980.

THR: HIGH orl, ipr.

Disaster Hazard: When heated to decomp it emits tox fumes of NO_x.

PHENIODOL

CAS RN: 577913 NIOSH #: MW 5150000
 mf: C₁₅H₁₂I₂O₃; mw: 494.07

SYNS:

3,5-DIODO-ALPHA-PHENYL-
 PHLORETTIC ACID
 BETA-(4-HYDROXY-3,5-DIODO-
 PHENYL)-ALPHA-PHENYLPRO-
 PIONIC ACID

IODOALPHIONIC ACID

TOXICITY DATA: 3-2 **CODEN:**
 orl-mus LD₅₀: 3800 mg/kg JMCMAR 13,997,70
 ivn-mus LD₅₀: 400 mg/kg JMCMAR 13,997,70

THR: HIGH ivn; MOD orl.

Disaster Hazard: When heated to decomp it emits very tox fumes of I⁻.

PHENIPRAZINE

CAS RN: 55527 NIOSH #: MV 7350000
 mf: C₉H₁₄N₂; mw: 150.25

SYNS:

(ALPHA-METHYLPHENETHYL)-
 HYDRAZINE
 BETA-PHENYLISOPROPYLHYDRA-
 ZINE

1-PHENYL-2-HYDRAZINOPRO-
 PANE
 PHENYLISOPROPYLHYDRAZINE

TOXICITY DATA: 3 **CODEN:**
 orl-rat LD₅₀: 34 mg/kg 27ZQAG ,353,72
 ipr-rat LD₅₀: 40 mg/kg 27ZQAG ,353,72
 scu-rat LD₅₀: 45 mg/kg 27ZQAG ,353,72
 ivn-rat LD₅₀: 44 mg/kg 27ZQAG ,353,72
 orl-mus LD₅₀: 164 mg/kg JPETAB 131,115,61
 ipr-mus LD₅₀: 122 mg/kg JPETAB 128,7,60
 scu-mus LD₅₀: 95 mg/kg ANYAA9 80,568,59
 ivn-mus LD₅₀: 12 mg/kg ARZNAD 12,352,62

THR: HIGH orl, ipr, scu, ivn.

Disaster Hazard: When heated to decomp it emits tox fumes of NO_x.

PHENIPRAZINE HYDROCHLORIDE

CAS RN: 66057 NIOSH #: MV 7400000
 mf: C₉H₁₄N₂·CIH; mw: 186.71

SYN: (1-METHYL-2-PHENYLETHYL)-HYDRAZINEUM CHLORIDE

TOXICITY DATA: 3 **CODEN:**
 orl-mus LD₅₀: 59 mg/kg JNEAQ 5,125,66
 ipr-mus LD₅₀: 117 mg/kg JNEAQ 5,125,66
 scu-mus LD₅₀: 87 mg/kg JNEAQ 5,125,66
 ivn-mus LD₅₀: 66 mg/kg JNEAQ 5,125,66

THR: HIGH orl, ipr, scu, ivn.

Disaster Hazard: When heated to decomp it emits very tox fumes of Cl⁻, NO_x and HCl.

PHENODIANISYL HYDROCHLORIDE

CAS RN: 537053 NIOSH #: MF 2000000
 mf: C₂₃H₂₅N₃O₃·CIH; mw: 427.97

Crystals, odorless. mp: 176°. Very sol in alc; insol in water, oils.

SYNS:

ALPHA,GAMMA-DI-P-ANISYL-
 BETA-(ETHOXYPHENYL)GUA-
 NIDINE HYDROCHLORIDE
 DIANISYL-MONOPHENETHYL-
 GUANIDINE HYDROCHLORIDE
 2-(4-ETHOXYPHENYL)-1,3-BIS(4-
 METHOXYPHENYL)GUANIDINE
 HYDROCHLORIDE

GUANICAINE
 N,N'-BIS(4-METHOXYPHENYL)-
 N''-(4-ETHOXYPHENYL)-
 GUANIDINE HYDROCHLORIDE

TOXICITY DATA: 3 **CODEN:**
 orl-dog LD_{Lo}: 75 mg/kg HBAMAK 4,1291,35
 scu-rbt LD₅₀: 150 mg/kg 12VXA5 9,940,76
 scu-gpg LD_{Lo}: 150 mg/kg HBAMAK 4,1291,35

THR: HIGH orl, scu. Solutions decomp by light.

Disaster Hazard: When heated to decomp it emits very tox fumes of HCl and NO_x.

PHENOL

CAS RN: 108952 NIOSH #: SJ 3325000
 mf: C₆H₆O; mw: 94.12

White, crystalline mass which turns pink or red if not perfectly pure, burning taste, distinctive odor. mp: 40.6°, bp: 181.9°, flash p: 175°F (CC), d: 1.072, autoign. temp.: 1319°F, vap. press: 1 mm @ 40.1°, vap. d: 3.24. Sol in water; misc in alc, ether.

SYNS:

ACIDE CARBOLIQUE (FRENCH)
 BAKER'S P AND S LIQUID AND
 OINTMENT
 CARBOLIC ACID
 CARBOLSAURE (GERMAN)
 FENOL (DUTCH, POLISH)
 FENOLO (ITALIAN)
 HYDROXYBENZENE
 MONOHYDROXYBENZENE

NCI-C50124
 OXYBENZENE
 PHENIC ACID
 PHENOLE (GERMAN)
 PHENYL HYDRATE
 PHENYL HYDROXIDE
 PHENYLIC ACID
 PHENYLIC ALCOHOL

TOXICITY DATA:

skn-rbt 500 mg/24H SEV
 skn-rbt 535 mg open SEV
 eye-rbt 5 mg SEV
 mmo-sat 400 μ L/plate
 sce-hmn:lym 200 umol/L
 dnd-mam:lym 250 mmol/L
 orl-rat TDLo:14 kg/kg/2Y-C:ETA
 orl-mus TDLo:27 kg/kg/2Y-C:ETA
 skn-mus TDLo:16 gm/kg/
 40W-I:CARC
 skn-mus TD:4000 mg/kg/
 24W-I:NEO
 orl-hmn LDLo:140 mg/kg
 orl-rat LD50:414 mg/kg
 skn-rat LD50:669 mg/kg
 ipr-rat LD50:250 mg/kg
 scu-rat LDLo:650 mg/kg
 orl-mus LD50:300 mg/kg
 ipr-mus LD50:360 mg/kg
 scu-mus LD50:344 mg/kg
 ivn-mus LD50:112 mg/kg
 orl-dog LDLo:500 mg/kg
 par-dog LDLo:2000 mg/kg
 orl-cat LDLo:80 mg/kg
 scu-cat LDLo:80 mg/kg
 par-cat LDLo:500 mg/kg
 orl-rbt LDLo:420 mg/kg
 skn-rbt LD50:850 mg/kg
 ipr-rbt LDLo:620 mg/kg
 scu-rbt LDLo:620 mg/kg
 ivn-rbt LDLo:180 mg/kg
 par-rbt LDLo:300 mg/kg
 ipr-gpg LDLo:300 mg/kg
 scu-gpg LDLo:450 mg/kg
 scu-frg LDLo:75 mg/kg
 par-frg LDLo:290 mg/kg
 scu-frg LDLo:290 mg/kg

3 CODEN:

BIOFX* 27-4/73
 UCDS** 1/6/66
 UCDS** 1/6/66
 BECTA6 24,590,80
 CNREA8 40,1189,80
 PNASA6 48,686,62
 NCITR* NCI-CG-TR-
 203,80
 NCITR* NCI-CG-TR-
 203,80
 CNREA8 19,413,59
 CNREA8 19,413,59
 29ZWAE ,329,68
 BIOFX* 27-4/73
 BJIMAG 27,155,70
 BJPCAL 13,20,58
 HBAMAK 4,1319,35
 JPETAB 88,400,46
 AFREAW 3,197,51
 INHEAO 5,143,67
 QJPPAL 12,212,39
 HBAMAK 4,1319,35
 RMSRA6 15,561,1895
 HBAMAK 4,1319,35
 JPETAB 80,233,44
 RMSRA6 15,561,1895
 JPETAB 80,233,44
 AIHAAP 37(10),596,76
 JPETAB 80,233,44
 JPETAB 80,233,44
 JPETAB 80,233,44
 RMSRA6 15,561,1895
 HBTXAC 1,228,56
 HBTXAC 1,228,56
 HBAMAK 4,1319,35
 AEPPAE 166,437,32
 HBTXAC 1,228,56

Aquatic Toxicity Rating: TLm96:100-10 ppm WQCHM*
 4,-74.

TLV: Air: 5 ppm (skin) DTLVS* 4,328,80. **Toxicology Review:** CMTVAS 10(3),49,73; JIHTAB 31,146,49; MUREAV 47(2),75,78; FNSCA6 2,67,73; ZKKOBW 78,99,72. **OSHA Standard:** Air: TWA 5 ppm (skin) (SCP-L) FEREAC 39,23540,74. **DOT:** Poison B, Label: Poison FEREAC 41,57018,76. **Occupational Exposure to Phenol recm std:** Air: TWA 20 mg/m³; CL 60 mg/m³/15M NTIS**. **Carcinogenesis Bioassay Completed; Results Negative (NCITR* NCI-CG-TR-203,80).** "NIOSH Manual of Analytical Methods" VOL 3 S330. Reported in EPA TSCA Inventory, 1980.

THR: MUT data. A skn, eye irr. An exper CARC, NEO, ETA. HIGH orl, ipr, scu, par. MOD skn, scu, orl, par. In acute phenol poisoning, the main effect is on the CNS. Absorption from spilling phenolic solutions on the skin may be very rapid, and death results from collapse within 30 min to several hrs. Death has resulted from absorption of phenol through a skin area of 64 in. Where death is delayed, damage to the kidneys, liver, pancreas and spleen and edema of the lungs may result. Absorbed phenol is partly excreted by the kidneys, partly oxidized. Part of the excreted portion is combined with sulfuric and glycuronic acids; the remainder is excreted unchanged. The symptoms develop

rapidly, frequently within 15-20 min following spilling of phenol on the skin. Headache, dizziness, muscular weakness, dimness of vision, ringing in the ears, irregular and rapid breathing, weak pulse, and dyspnea may all develop, and may be followed by loss of consciousness, collapse and death. When taken internally, there is also nausea, with or without vomiting, severe abdominal pain, and corrosion of the lips, mouth, throat, esophagus and stomach. There may be perforation. On the skin, the affected area is white, wrinkled and softened, and there is usually no immediate complaint of pain; later, intense burning is felt, followed by local anesthesia and still later, by gangrene. Chronic poisoning, following prolonged exposures to low concs of the vapor or mist, results in digestive disturbances (vomiting, difficulty in swallowing, excessive salivation, diarrhea, loss of appetite), nervous disorders (headache, fainting, dizziness, mental disturbances) and skin eruptions. Chronic poisoning may terminate fatally in cases where there has been extensive damage to the kidneys or liver. Dermatitis resulting from contact with phenol or phenol-containing products is fairly common in industry. A common air contaminant. As little as 1.5 g (oral) has killed.

Fire Hazard: Mod, when exposed to heat, flame or oxidizers and reacts violently with (AlCl₃ + nitrobenzene), butadiene, peroxydisulfuric acid, peroxyomonosulfuric acid.

Spontaneous Heating: No.

Disaster Hazard: Dangerous; when heated it emits toxic fumes; can react with oxidizing materials.

To Fight Fire: Alcohol foam, CO₂, dry chemical.

For further information see Vol. 3, No. 4 in *DPIM Report*.

PHENOL (liquid)

CAS RN: 108952 **NIOSH #:** SJ 3330000
mf: C₆H₅•OH; **mw:** 94.11

Colorless needles; d: 1.071 @ 25°/4°; mp: 40.9°; bp: 181.8°; sol in water; misc in alc and ether. A liquid tar acid containing over 50% benzophenol (FEREAC 41,15972,76)

SYN: CARBOLIC ACID, LIQUID (DOT)

TOXICITY DATA: **3 CODEN:**

Toxicology Review: JIHTAB 31,146,49. **DOT:** Poison B, Label: Poison FEREAC 41,57018,76. **Occupational Exposure to Phenol recm std:** Air: TWA 20 mg/m³; CL 60 mg/m³/15M NTIS**. Reported in EPA TSCA Inventory, 1980.

THR: HIGH orl, ihl, skn. A poison. See also phenol.

PHENOL-para-ARSONIC ACID

CAS RN: 98146 **NIOSH #:** CY 5075000
mf: C₆H₇AsO₄; **mw:** 218.05

2272 POTASSIUM CHLOROPALLADATE

ipr-rat LD₅₀: 660 mg/kg
ivn-rat LD₅₀: 39 mg/kg
orl-mus LD₅₀: 383 mg/kg
ipr-mus LD₅₀: 552 mg/kg
ivn-mus LD₅₀: 117 mg/kg
ipr-dog LD_{Lo}: 85 mg/kg
orl-gpg LD₅₀: 2500 mg/kg
ipr-gpg LD_{Lo}: 900 mg/kg
scu-gpg LD₅₀: 2550 mg/kg
scu-pgn LD_{Lo}: 2210 mg/kg
scu-frg LD_{Lo}: 2120 mg/kg

FCTXAV 3,597,65
ARZNAD 14,1128,64
ARZNAD 14,1128,64
COREAF 256,1043,63
JETOAS 8(3),188,75
AVERAG 44,555,37
JPETAB 35,1,29
JPETAB 35,1,29
HBAMAK 4,1289,35
HBAMAK 4,1289,35
HBAMAK 4,1289,35

cyt-hmn:leu 4 umol/L
cyt-hmn:fbr 100 umol/L
cyt-rat-orl 365 mg/kg/1Y-I
cyt-rat-ipi 15 mg/kg
cyt-mus:mmr 1 umol/L/48H
otr-ham:emb 10 umol/L
dnd-ham:emb 10 umol/L
cyt-ham:ovr 150 ug/L
sce-ham:ovr 150 ug/L
orl-mus TD_{Lo}: 1600 mg/kg/62W-C:ETA

MUREAV 58,175,78
CARYAB 32,379,79
CYGEDX 10,27,76
CYGEDX 10,27,76
MUREAV 67,221,79
CNREA8 39,193,79
CNREA8 39,193,79
CARYAB 32,379,79
CARYAB 32,379,79
JONUAI 101,1431,71

Toxicology Review: INTEAG 15(1),7,74; 27ZTAP 3, 118,69. Reported in EPA TSCA Inventory, 1980.

THR: HIGH ivn, orl, ipr. MOD orl (inf), ipr, scu. An eye irr. A nutrient and/or dietary supplement food additive. Large oral doses cause GI irr, purging, weakness and circulatory problems. Also affects blood picture. Violent reaction with BrF₃; (H₂SO₄ + KMnO₄). **Disaster Hazard:** When heated to decomp it emits tox fumes of Cl⁻.

POTASSIUM CHLOROPALLADATE

CAS RN: 16919736 NIOSH #: TS 8089000
mf: Cl₇K₂Pd; mw: 397.30

Cubic, red crystals; mp: (decomp); d: 2.738.

TOXICITY DATA: 2 CODEN:
skn-rbt 100 mg/24H MLD AEHLAU 30,168,75

Reported in EPA TSCA Inventory, 1980.

THR: A skn irr. See also palladium compounds.

Disaster Hazard: When heated to decomp it emits tox fumes of Cl⁻.

POTASSIUM-p-CHLOROPHENATE

CAS RN: 1121740 NIOSH #: SK 5950000
mf: C₈H₇ClO₂•K; mw: 166.65

SYN: p-CHLOREFENOLAT DRASELNY (CZECH)

TOXICITY DATA: 2 CODEN:
skn-rbt 500 mg/24H SEV 28ZPAK ,79,72
eye-rbt 250 ug/24H SEV 28ZPAK ,79,72
orl-rat LD₅₀: 587 mg/kg 28ZPAK ,79,72

THR: MOD orl. Skn and eye irr.

Disaster Hazard: When heated to decomp it emits tox fumes of Cl⁻.

POTASSIUM CHROMATE (VI)

CAS RN: 7789006 NIOSH #: GB 2940000
mf: CrO₄•2K; mw: 194.20

Rhombic, yellow crystals; mp: 975°; d: 2.73 @ 18°. Sol in water; insol in alc.

SYN:

DIPOTASSIUM CHROMATE
DIPOTASSIUM CHROMATE

TOXICITY DATA:
mmo-sat 80 ug/plate
mma-sat 10 ug/plate
mmo-esc 1600 umol/L
mrc-bcs 20 mmol/L
cyt-hmn:lym 20 umol/L

DIPOTASSIUM MONOCHROMATE
NEUTRAL POTASSIUM CHROMATE

3 CODEN:
MUREAV 54,139,78
AEMIDF 33,805,77
MUREAV 58,175,78
MUREAV 58,175,78
MUREAV 77,157,80

cyt-hmn:leu 4 umol/L
cyt-hmn:fbr 100 umol/L
cyt-rat-orl 365 mg/kg/1Y-I
cyt-rat-ipi 15 mg/kg
cyt-mus:mmr 1 umol/L/48H
otr-ham:emb 10 umol/L
dnd-ham:emb 10 umol/L
cyt-ham:ovr 150 ug/L
sce-ham:ovr 150 ug/L
orl-mus TD_{Lo}: 1600 mg/kg/62W-C:ETA
scu-dog LD_{Lo}: 19 mg/kg
ivn-dog LD_{Lo}: 3 mg/kg
scu-rbt LD_{Lo}: 12 mg/kg
ims-rbt LD₅₀: 11 mg/kg
scu-gpg LD₅₀: 60 mg/kg
ivn-mam LD_{Lo}: 259 mg/kg
SMSJAR 26,131,1826
EQSSDX 1,1,75
EQSSDX 1,1,75
JPETAB 87,119,46
EQSSDX 1,1,75
SMSJAR 26,131,1826

Carcinogenic Determination: Animal Suspected IARC** 2,100,73; IARC** 23,205,80. **Toxicology Review:** PEXTAR 12,102,69; 85DHAX Cr,22,74; 27ZTAP 3,117,69. OSHA Standard: Air: CL 100 ug(CrO₃)/m³ (SCP-O) FEREAC 39,23540,74. Occupational Exposure to Cr(VI) recm std: Air: TWA 25 ug(Cr(VI))/m³; CL 50 ug/m³/15M NTIS**. Reported in EPA TSCA Inventory, 1980. EPA TSCA 8(a) Preliminary Assessment Information Proposed Rule FERREAC 45,13646,80.

THR: MUT data. An exper ETA. A hmnn CARC. An exper CARC. HIGH scu, ivn, ims. A powerful oxidizer. See also chromium compounds.

For further information see Potassium Chromate, Vol. 1, No. 7 of DPIM Report.

POTASSIUM CHROMIUM SULFATE

CAS RN: 10141-00-1 NIOSH #: GB 6845000
mf: Cr•2H₂O₄S•K; mw: 287.26

SYN:

CHROMIUM POTASSIUM SULFATE (1:1:2)
CHROME ALUM CHROMIC POTASSIUM SULFURIC ACID, CHROMIUM (3+)
POTASSIUM SALT (2:1:1)

THR: See chromium compounds and sulfates.
Toxicology Review: Carcinogenic. Determination: No data IARC** 23,205,89. Reported in EPA TSCA Inventory, 1980.

POTASSIUM CITRATE

CAS RN: 866842 NIOSH #: GE 8255000
mf: C₆H₅O₇•3K; mw: 306.41

Colorless or white crystals or powder, odorless, deliquescent, sol in water and glycerol, almost insol in alcohol. d: 1.98, decomp when heated to 230°.

SYN:

CITRIC ACID, TRIPOTASSIUM SALT TRIPOTASSIUM CITRATE MONOHYDRATE

TOXICITY DATA: 3 CODEN:
ivn-dog LD₅₀: 167 mg/kg AVERAG 44,555,37

Reported in EPA TSCA Inventory, 1980.

THR: HIGH ipr, LOW oral. A sequestrant food additive, also a general-purpose food additive.